AXMINSTER Hobby SERIES

Code **505198**
Code **505199**
Code **505200**
Code **505201**
Code **505202**

Pillar Drills

User Manual

505198
AH1302DP

505199
AH1603DP

505200
AH2003FDP

505201
AH16R

505202
AH16FRD

AXMINSTER • THREE YEAR GUARANTEE • 3

Index of Contents

Index of Contents	02
Declaration of Conformity	02
What's Included	03-04-05
General Safety Instructions	5-6
General Safety Instructions for Drilling Machines	06
Specification	07
Assembly	08-09-10-11-12-13
Illustration and Parts Description	14-15-16-17
Changing the Speed	18-19
Speed Select Table	20
Removing the Chuck Assembly	21
Maintenance	22
Parts Breakdown/List	23-24-25-26-27-28-29-30-31-32-33
Wiring Diagram	34-35
Troubleshooting	36
Notes	37-38-39

Declaration of Conformity

Copied from CE Certificate

The undersigned, Galen Chen authorised by Qingdao D&D Electromechanical Technologies Co., Ltd. Jiaozhou Branch No.1 D&D Road, Jiaobei Town, Jiaozhou City, Qingdao, Shandong, China

Drilling Machine

Manufactured Qingdao D&D Electromechanical Technologies Co., Ltd. is in compliance with the standards determined in the following Council Directive.

EN 61029-1:2009+A11:2010
2006/42/EC ANNEX 1

Warning

The symbols below advise that you follow the correct safety procedures when using this machine.

Fully read manual and safety instructions before use

Ear protection should be worn

Eye protection should be worn

Dust mask should be worn

HAZARD
Motor gets hot

Quantity	Item	Part	Model Number
1 No	AH1302DP Pillar Drill	**A**	Code: 505198
	AH1603DP Pillar Drill	**B**	Code: 505199
	AH2003FDP Pillar Drill	**C**	Code: 505200
	AH16RD Radial Pillar Drill	**D**	Code: 505201
	AH16FRD Radial Pillar Drill	**E**	Code: 505202
Box Containing:			
1 No	Pillar drill head	**1**	
1 No	Base	**2a**	(505201 Only)
		2b	(505198-505199 Only)
		2c	(505200-505202 Only)
1 No	Base support steel bar	**3**	(505201 Only)
1 No	Drill table extension bracket arm	**4**	(505202 Only)
1 No	Drill table mounting bracket arm assembly	**5**	(505202 Only)
1 No	Drill pillar complete with mounting flange, rise and fall rack and retaining ring	**6**	
1 No	Drill pillar complete with mounting flange, rise and fall rack, retaining ring and drill table mounting bracket arm assembly		(505200 Only)
1 No	Drill table	**7a**	(505198-505201 Only)
		7b	(505199 Only)
		7c	(505200-505202 Only)
Bags Containing:			
3 No	Lever feed handles	**8**	
1 No	Pulley cover knob	**9**	
1 No	Drill guard assembly	**10**	
1 No	Morse taper drift	**11**	(505200-505201-505202 Only)
1 No	Jockey pulley assembly	**12**	(505199-505200 Only)
1 No	Crank handle for table rise and fall mechanism	**13**	
2 No	Crank handles for table and drill head assembly	**13**	(505201-505202 Only)
1 No	Keyless Chuck	**14**	
	(NOTE: CHUCKS CAN VARY IN SIZE DEPENDING ON MODEL)		
2 No	Bristol clamping handles (Note 505202 has 3)	**15**	
4 No	M8x20mm Hex bolts	**16a**	(505198-505201 Only)
4 No	M8x30mm Hex bolts	**16b**	(505199-505201 Only)
4 No	M8x40mm Hex bolts	**16c**	(505202 Only)
1 No	Base support bar fixings and NVR switch shroud	**17**	(505201 Only)
1 No	Column spacer steel block	**18**	(505201-505202 Only)
1 No	Morse taper arbor for chuck assembly	**19**	(505201-505202 Only)
1 No	3-4mm Hex keys	**20**	

What's Included

Having unpacked your machine and its accessories, please check the contents against the equipment list "What's Included", if there are any discrepancies, please contact Axminster Tool Centre using the procedures laid down in the catalogue.

PLEASE DISPOSE OF THE PACKAGING RESPONSIBLY; MUCH OF THE MATERIAL IS RECYCLABLE

The machine and its accessories will arrive coated with heavy corrosion preventative grease and greased wax paper or plastic wrapping. These will need to be cleaned from the machine, its components and accessories prior to it being set up and commissioned. Use water soluble de greaser to remove the barrier grease. Be warned, it will stain if you splash it on clothing etc.

WARNING! WEAR OVERALLS, RUBBER GLOVES AND EYE PROTECTION!

After cleaning, lightly coat the exposed metal surfaces of the machine with a thin layer of light machine oil. N.B If you used water soluble de greaser make sure you apply this thin film sooner rather than later. **Please read the Instruction Manual prior to using your new machine; as well as the installation procedure, there are daily and periodic maintenance recommendations to help you keep your machine on top line and prolong its life. Keep this Instruction Manual readily accessible for any others who may also be required to use the machine.**

General Safety Instructions

Work Place/Environment/Installation

Mains Powered Machines/ Primary Precautions

These machines are supplied with a moulded 13 Amp plug and 3 core power cable. Before using the machine inspect the cable and the plug to make sure that neither are damaged. If any damage is visible have the machine inspected/repaired by a suitably qualified person. If it is necessary to replace the plug, it is preferable to use an 'unbreakable' type that will resist damage. Only use a 13 Amp plug, make sure the cable clamp is tightened securely. Fuse at 13 Amp. If extension leads are to be used, carry out the same safety checks on them, and ensure that they are correctly rated to safely supply the current that is required for your machine. It is also recommended that the power supply outlet is the switched type, and that the supply is switched off whilst plugging in, or unplugging the machine.

General Instructions for 230V Tools

Good Working Practices/Safety

The following suggestions will enable you to observe good working practices, keep yourself and fellow workers safe and maintain your tools and equipment in good working order.

WARNING! KEEP TOOLS AND EQUIPMENT OUT OF THE REACH OF YOUNG CHILDREN!

Work Place/Environment

Do not use when or where it is liable to get wet. If the machine is to be used outside and it starts to rain stop work and move it inside. If machine has got wet; dry it off as soon as possible, with a cloth or paper towel.

Do not use 230V a.c. powered machines anywhere within a site area that is flooded or puddled, and do not trail extension cables across wet areas.

Keep the machine clean; it will enable you to more easily see any damage that may have occurred.

Clean the machine with a damp soapy cloth if needs be, do not use any solvents or cleaners, as these may cause damage to any plastic parts or to the electrical components.

Keep the work area as uncluttered as is practical, this includes personnel as well as material.

WARNING! UNDER NO CIRCUMSTANCES SHOULD CHILDREN BE ALLOWED IN WORK AREAS!

Continues Over...

General Safety Instructions

It is good practice to leave the machine unplugged until work is about to commence, also make sure to unplug the machine when it is not in use, or unattended. Always disconnect by pulling on the plug body and not the cable.

Once you are ready to commence work, remove any tools used in the setting operations (if any) and place safely out of the way. Re-connect the machine. Carry out a final check e.g. check the drill bit is securely tightened in the machine, check you have the correct speed and function set, check that the power cable will not 'snag' etc.

Make sure you are comfortable before you start work, balanced, not reaching etc. If the work you are carrying out is liable to generate flying grit, dust or chips, wear the appropriate safety clothing, goggles, gloves, masks etc., If the work operation appears to be excessively noisy, wear ear-defenders. If you wear your hair in a long style, wearing a cap, safety helmet, hairnet, even a sweatband, will minimise the possibility of your hair being caught up in the rotating parts of the machine, likewise,consideration should be given to the removal of rings and wristwatches, if these are liable to be a 'snag' hazard. Consideration should also be given to non-slip footwear, etc.

DO NOT work with cutting or boring tools of any description if you are tired, your attention is wandering or you are being subjected to distraction. A deep cut, a lost fingertip or worse is not worth it!

DO NOT use this machine within the designated safety areas of flammable liquid stores or in areas where there may be volatile gases. There are very expensive, very specialised machines for working in these areas, **THIS IS NOT ONE OF THEM**.

CHECK that drills are the correct type and size, are undamaged and are kept clean and sharp, this will maintain their operating performance and lessen the loading on the machine. Above all, **OBSERVE….** make sure you know what is happening around you, and **USE YOUR COMMON SENSE**.

General Safety Instructions for Drilling Machines

1. Do not operate the machine without carrying out a preliminary inspection.

2. Check that the speed is correct for the planned operation, and the upper drive belt cover is closed and fastened secure.

3. Check the drill bit is the correct size and type, is correctly fitted and tightened in the chuck.

4. Make sure that the drillhead, the table bracket arm, the table tilt and the table swivel clamps are all locked before any drilling is attempted.

5. Do not attempt to carry out any drilling operation on material that has not been secured to the drill table, either by vise or clamp.

6. Remove any tools (chuck key, spanners etc), that may have been used in setting up operations and put them away in their correct stowage positions.

7. Try to arrange the drilling operation so that the drill tip does not come in contact with the table.

8. Always allow the drill to stop before removing drillings or swarf from around the job or the table.

9. NEVER remove 'flying' swarf strands from the drill whilst it is turning.

10. It is a good precaution to wear eye protection when drilling, especially using small drills, or very hard material that produces small chips.

11. It is not a good idea to wear gloves when operating a drill press.

12. After the job is completed, remove all tools and accessories from the machine, check that drill bits are still sharp and re-use able.

13. Clean the machine down thoroughly, including removing coolant or cutting compounds from the drill table.

14. Lightly coat all metal surfaces with a light oil coating.

15. Disconnect the machine from the supply. Secure the cable/plug clear of the floor.

Model	AH1302DP
Code	505198
Power	250W (230V)
Speed Range	(5) 460-2,480rpm
Throat	125mm
Taper	B16
Chuck Cap/Type	13mm Keyless
Chuck Travel	60mm
Max Chuck to Table	230mm
Max Chuck to Base	340mm
Diameter of Column	59.5mm
Table Size	190 x 190mm
Table Tilt	-45° to +45°
Base Size	334 x 203mm
Overall L x W x H	500 x 280 x 710mm
Weight	28kg

Model	AH1603DP
Code	505199
Power	250W (230V)
Speed Range	(12) 230-2,470rpm
Throat	152.5mm
Taper	B16
Chuck Cap/Type	13mm Keyless
Chuck Travel	80mm
Max Chuck to Table	345mm
Max Chuck to Base	460mm
Diameter of Column	65mm
Table Size	240 x 240mm
Table Tilt	-45° to +45°
Base Size	380 x 245mm
Overall L x W x H	530 x 280 x 875mm
Weight	34kg

Model	AH2003FDP
Code	505200
Power	375W (230V)
Speed Range	(12) 180-2,740rpm
Throat	178mm
Taper	2MT
Chuck Cap/Type	16mm Keyless
Chuck Travel	80mm
Max Chuck to Table	660mm
Max Chuck to Base	1,135mm
Diameter of Column	70mm
Table Size	255 x 255mm
Table Tilt	-45° to +45°
Base Size	420 x 250mm
Overall L x W x H	560 x 330 x 1,560mm
Weight	51kg

Model	AH16RD
Code	505201
Power	350W (230V)
Speed Range	(5) 460-2,480rpm
Throat	440mm
Taper	2MT
Chuck Cap/Type	13mm Keyless
Chuck Travel	80mm
Max Chuck to Table	385mm
Max Chuck to Base	500mm
Diameter of Column	59.5mm
Table Size	190 x 190mm
Table Tilt	-45° to +45°
Base Size	334 x 203mm (inc support)
Overall L x W x H	840 x 320 x 950mm
Weight	35kg

Model	AH16FRD
Code	505202
Power	375W (230V)
Speed Range	(5) 460-2,480rpm
Throat	440mm
Taper	2MT
Chuck Cap/Type	16mm Keyless
Chuck Travel	80mm
Max Chuck to Table	655mm
Max Chuck to Base	1,195mm
Diameter of Column	70mm
Table Size	295 x 295mm
Table Tilt	-45° to +45°
Base Size	430 x 265mm
Overall L x W x H	820 x 320 x 1,650mm
Weight	62kg

Assembly

Please read through the section entitled illustration and parts description, to identify the parts quickly and easily.

WARNING! THE DRILL HEAD IS A HEAVY AND SUBSTANTIAL PIECE OF MACHINERY, YOU ARE ADVISED TO HAVE HELP TO LIFT IT CLEAR OF THE BOX AND FIT IT TO THE COLUMN.

Place the base (2) on the bench or (floor) and place the mounting flange of the column (6) onto the seating flange of the base, align the holes. Use the four Hex bolts and secure the column to the base (see fig 1). Loosen the socket grubs crew holding the cup chamfered retaining collar to the column (with the supplied Hex key), remove it and the rise and fall rack, put aside (see fig 2).

Base Assembly for 505201 Radial Drill Only
Locate the base (2a), base support bar (3) and fixings (17). Place a plain washer over the two Hex bolts and insert them into the two holes on either side of the base. Turn the casing over, slide the support bar (3) through the two pre-drilled holes to the rear of the base until it's up against the casting. Locate the clamping bracket, insert the bolts through the pre-drilled holes and lower the bracket on top of the support bar (3), lock the assembly in position with the two nuts. (see fig 1a)

Take the drill table mounting bracket arm (5-7) and twist the worm drive shaft with your fingers such that the whole shaft protrudes from the casting and the worm gear itself is clear of the square recess in the main body of the casting (see fig 3).

NOTE: The Pillar Drill mounting bracket arm comes attached to the drill table for codes 505201,505198 and 505199

Locate and fit the crank handle (13) to the shaft, ensuring that you tighten the grub screw onto the machined flat on the shaft. This will keep the worm gear in position (see figs 4). Pick up the rise and fall gear rack, identify the top and the bottom, (the rack gearing is cut asymmetrically, with the gear cut extending closer to the bottom), make sure you have the rack the right way up, as it will allow you to drive the drill table up and down over its full range (see fig 5). Fit the rise and fall rack into the square recess in the smounting body casting, ensure that it is engaged with the pinion, (see figs 6-7) and lower the combined mechanism over the column (6). Allow it to slide down the column until the rise and fall rack is located in the cup chamfer in the top of the mounting flange (see figs 8-9). Replace the cup chamfered retaining collar over the column and slide it down onto the top of the rack. Lock it in place with the grub screw, ensuring that it has captured the upper end of the rack securely, but not too tight that the rack can not be swivelled around the pillar (see fig 2).

NOTE: The the drill table mounting bracket arm (5) is already assembled to the column for code 505200 so no assembly required

Check that the bracket can be driven up and down the column and can swivel around the pillar. Locate the Bristol clamping handle (15) and screw it into the threaded hole to the rear of the mounting bracket arm (5) and tighten, (see fig 10) check it has 'pinched' up on the column and the bracket is immobile; both in it's up and down travel and swivel movement.

Slot the drill table (7) into the machined hole to the front of the mounting arm (5-7) and screw a Bristol clamping handle (15) into to the threaded hole beneath the table and tighten, (see figs 11-12) check it has 'pinched' up on the drill table spigot and the drill table is immobile. For 505202 fit the extention arm (4) into the mounting arm then the table, see fig 12a.

CHECK the drill head, ensure that the two hex socket grub screws that lock the head in place on the column are withdrawn and will not foul on the column (6) when the head is fitted (see fig 13). Put the lower assembly you have just been working on in the designated position, make sure it is stable and lift the drillhead (1) over the column (6) and let it drop into place (see fig 14). Set the drill head approximately fore and aft and lock in position using the two caphead grub screws mentioned earlier. Check that the drillhead is immobile. Everything on the drilling machine is now secured.

Assembly for Radial Pillar Head Only
Lay the drill head on its side, locate the column spacer block (18) and insert it into machined recess inside the base of the drill head, see fig 15. Lift the drill head onto the column as described above and secure using a Bristol clamp (15). See figs 15-16

Continues on page 11

Fig 01

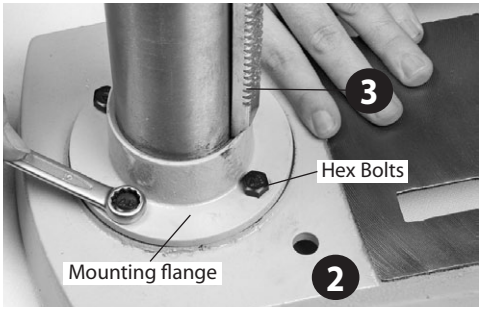


Fig 01a

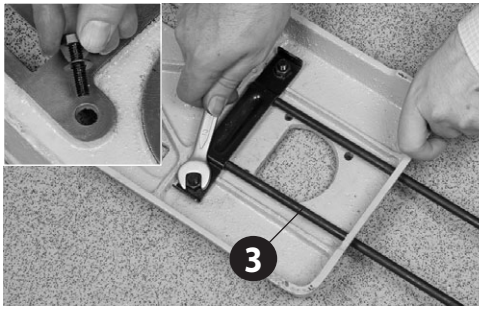


Fig 02

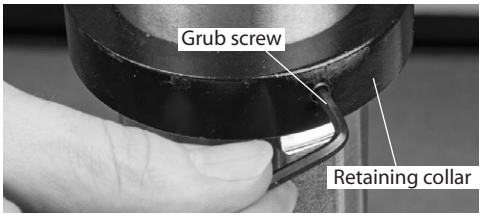
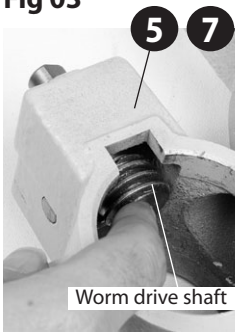


Fig 03



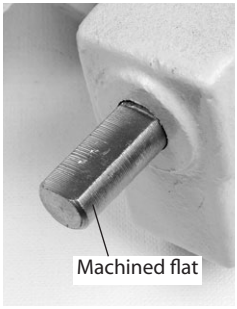
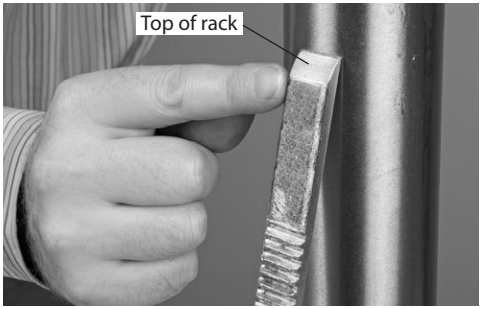
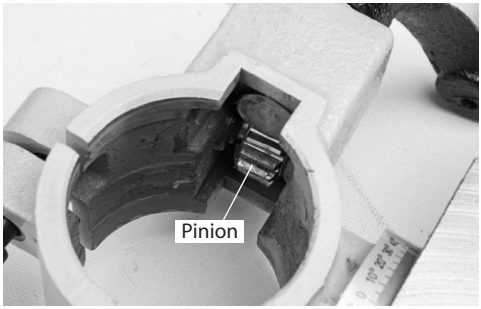
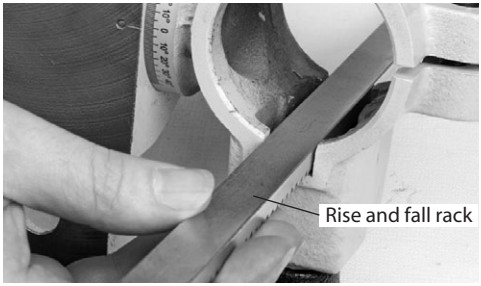


Fig 04

Fig 05-06-07

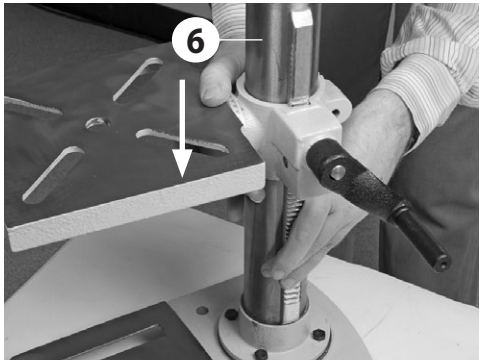






Continues Over...

Fig 08-09



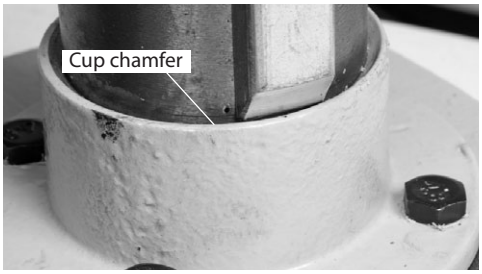


Fig 10

Fig 11

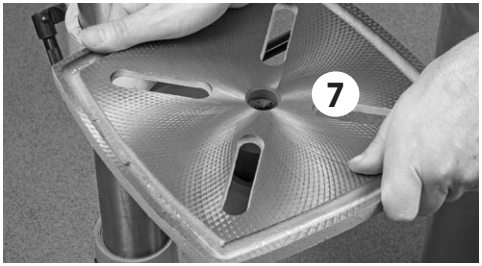


Fig 12-12a

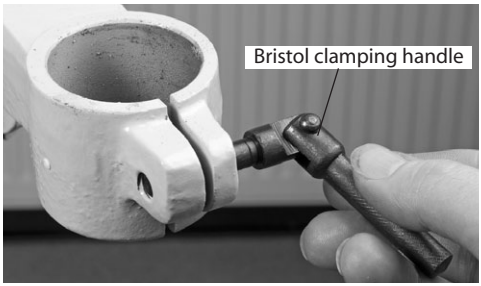
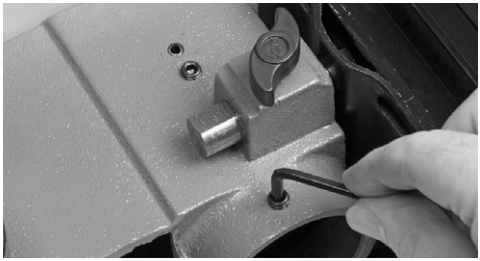
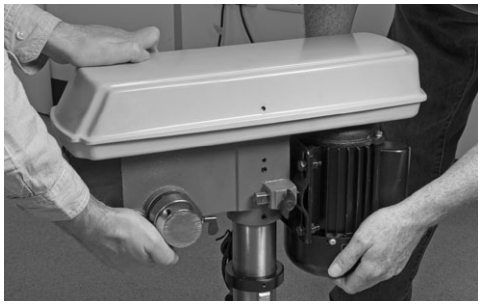


Fig 13-14

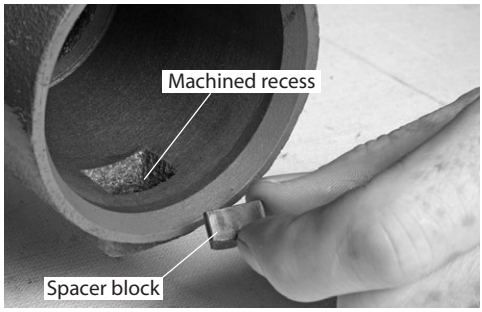


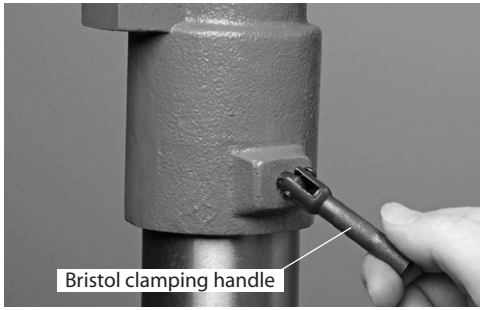


WARNING! THE DRILL HEAD IS A HEAVY AND SUBSTANTIAL PIECE OF MACHINERY, YOU ARE ADVISED TO HAVE HELP TO LIFT IT CLEAR OF THE BOX AND FIT IT TO THE COLUMN.

NOTE: Make sure the spacer block does not come out when lifting the drill head onto the column!

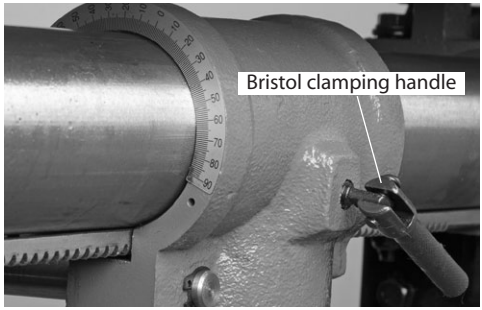
Fig 15-16





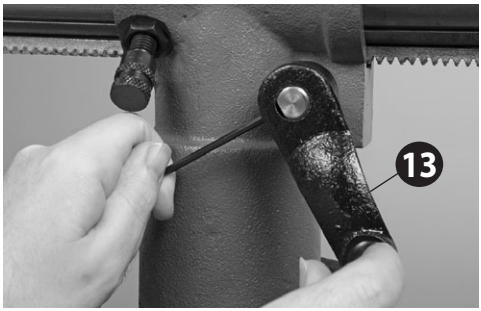
Locate another Bristol clamping handle (15) and screw it into the threaded hole for the Horizontal clamp assembly, see fig 17.

Fig 17



Locate and fit the crank handle (13) to the shaft for the tilt mechanism, ensuring that you tighten the grub screw onto the machined flat on the shaft. (see fig 18)

Fig 18

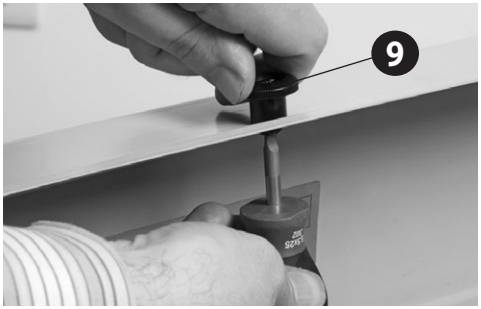


Pulley cover knob

NOTE: This applies only for codes 505198-505199 and 505200.

Locate the pulley cover knob (9), remove the Phillips screw, insert the screw through the pre-drilled hole in the pulley cover and secure the knob in place, see fig 19.

Fig 19



Jockey pulley & belt assembly

NOTE: This assembly applies only to codes 505199 and 505200

Open the pulley cover, remove the two pulley belts and place safely aside. Locate the jockey pulley (12), insert the shaft pin into the machined hole in the drill head, see fig 20-21.

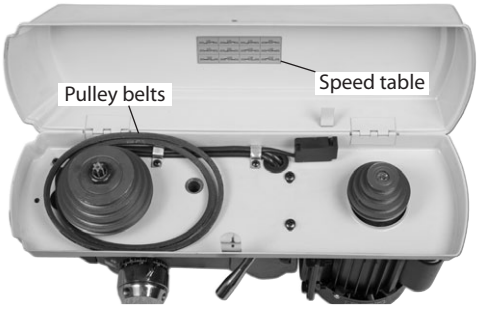
To fit the belts, first loosen the two motor yoke locks on either side of the drill head then pull the tensioning lever forward, thus moving the motor. Fit the belts to the requires speed, see the speed chart inside the pulley cover. Push the tensioning lever

Continues Over...

back to tighten the belts and retighten the motor yoke locks, see figs 22-23

NOTE: BE VERY CAREFUL NOT TO TRAP YOUR FINGERS WHEN FITTING THE BELTS!

Fig 20-21



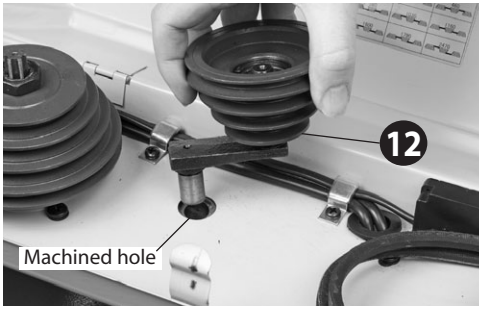
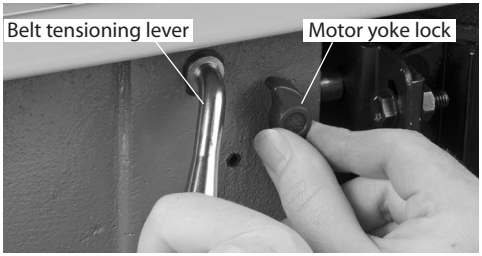


Fig 22-23



Keyless chuck

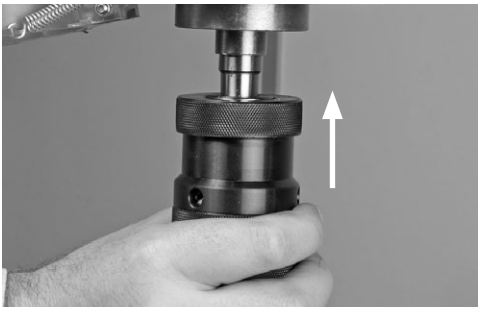
Locate the chuck (14) and insert it up over the morse taber arbor, using a high fased mallet, lightly tap it home. (see fig 24)

Fig 24

Morse taper arbor & chuck (Radial Drills Only)

Locate the morse taper arbor (19), insert the arbor into the keyless chuck (14) then slot the assembly up into the quill. Using a high fased mallet, lightly tap it home. (see figs 25-26)

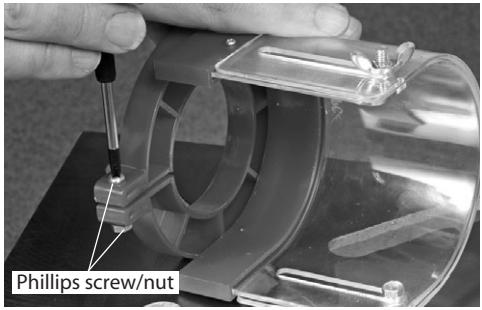
Fig 25-26

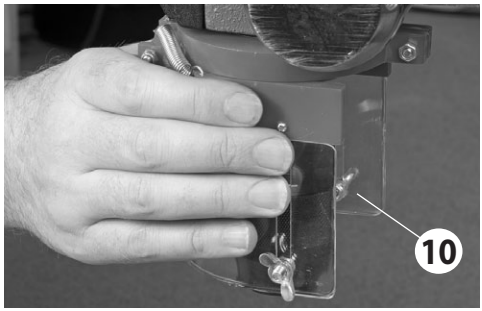


Drill guard

Locate the drill guard assembly (10), loosen the Phillips screw and nut to the rear of the guard, see fig 27 insert the assembly up over the lower bearing flange of the quill until the assembly is upagainst the drill casting, re-tighten the screw and nut to lock the guard assembly in place. (see fig 28)

Fig 27

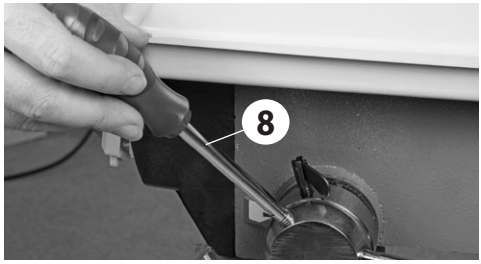




Lever Feed handles

Locate the three lever feed handles (8) and screw them into the threaded holes on the depth stop ring,see fig 29.

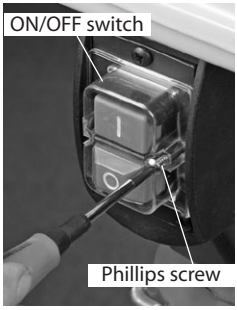
Fig 29



NVR switch shroud (Radial Drill 505201 Only)

Locate the NVR switch shroud assembly (17), remove the two Phillips screws from either side of the on/off switch and place safely aside ,see fig 30. Mount the NVR switch shroud over switch assembly and replace the two Phillips screw you removed earlier, see fig 31.

Fig 30-31



Codes 505198-505200

Codes 505201-505202

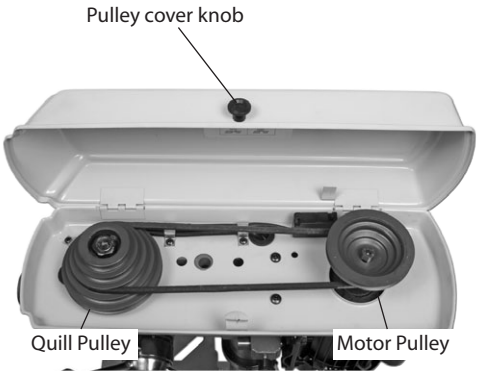
Pillar drills assembled.

Illustration and Parts Description

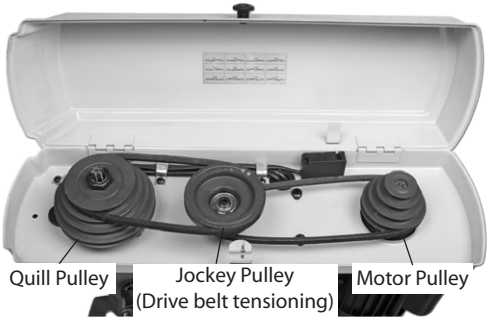
505200 (AH2003FDP)

505198 (AH1302DP)

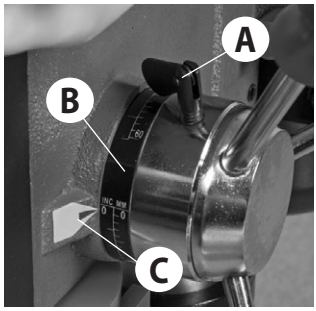
505199 (AH1603DP)



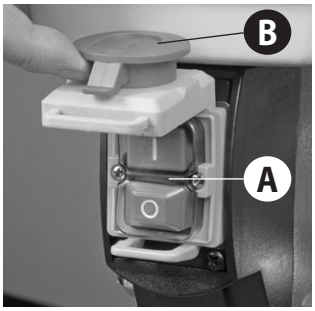
505198 Drive Pulley



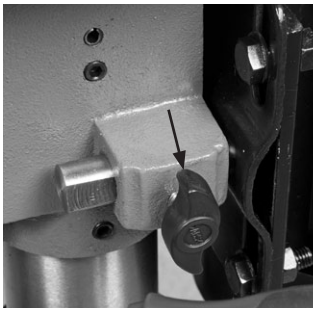
505199-505200 Drive Pulley



Depth stop clamp (A)
Depth scale (B)
Depth scale pointer (C)



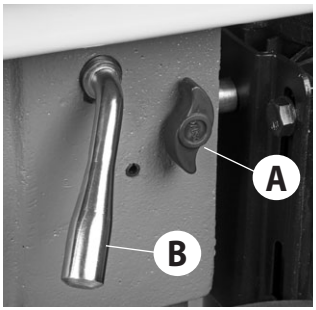
On/Off switch (A)
Emergency stop button (B)



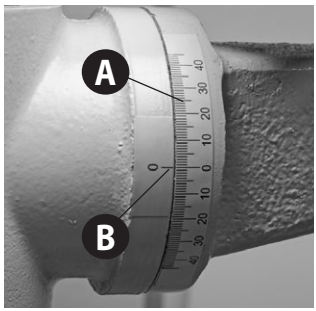
Motor yoke butterfly knob

Chuck guard

Table tilt clamping bolt



Motor yoke butterfly knob (A)
Drive belt tensioning lever lock (B)



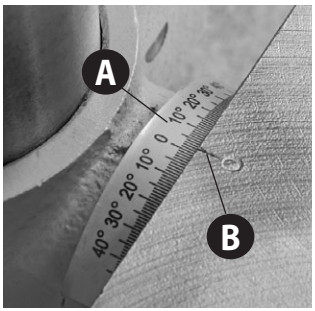
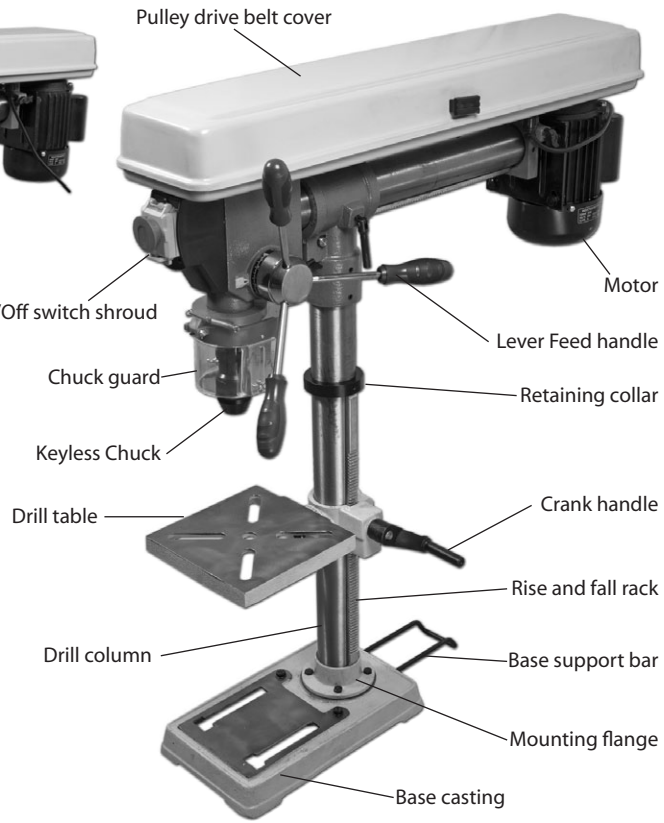


Table tilt scale (A)
Table tilt pointer (B)

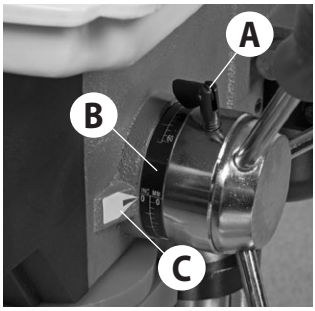
Bristol clamping handle for drill table mounting arm

Illustration and Parts Description

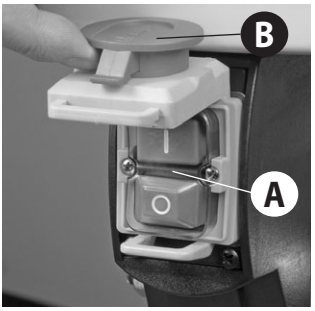
505202 (AH16FRD)



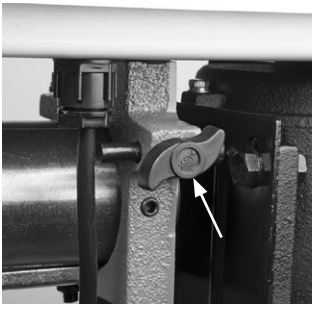
505201 (AH16RD)



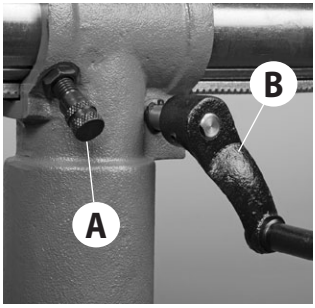
Depth stop clamp (A)
Depth scale (B)
Depth scale pointer (C)



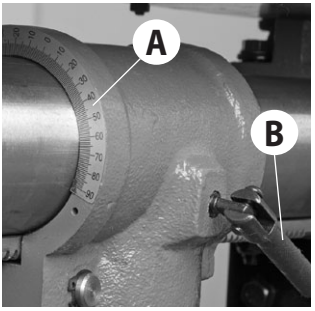
On/Off switch (A)
Emergency stop button (B)



Motor yoke butterfly knob

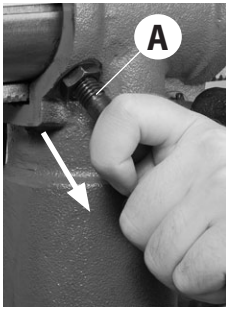


Vertical Pin lock (A)
Crank handle (B)



Vertical scale (A)
Horizontal column lock (B)

Bristol clamping handle for drill table mounting arm



Loosen the horizotal column lock (B),pull out the vertical pin (A) to un-lock the drill head column then rotate + or - to the appropriate angle using the tilt pointer on the column then re-tighten the horizontal lock to lock the assembly in position.

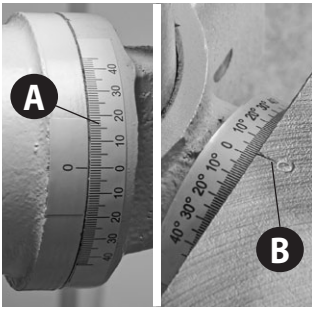


Table tilt scale (A)
Table tilt pointer (B)

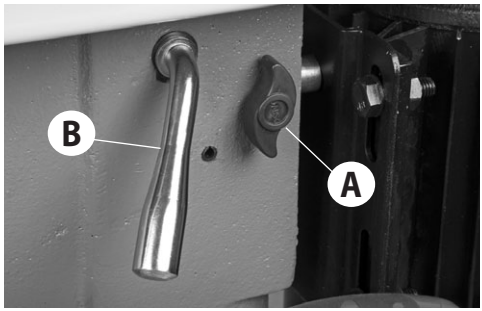
Changing the Speed

WARNING! DISCONNECT THE PILLAR DRILL FROM THE MAINS SUPPLY BEFORE CONTINUING!

Pillar Drills (505199 & 505200 Only)

Locate and loosen the motor yoke butterfly locks (A). Locate the drive belt tensioning lever (B), (see fig 32) turn it clockwise, to move the motor assembly "in". This will release the tension from the drive belts (See fig 34-35-36-37).

Fig 32



Refer to the (speed select table) and ascertain the belt positions for the speed you require. Move the belts to these positions.

WARNING! TAKE CARE NOT TO TRAP YOUR FINGERS WHEN REPOSITIONING THE BELT ON THE PULLEYS!

Turn the pulley train,see fig 33 to check the belts move freely. Tension the whole belt train by turning the drive belt tensioning lever (B) anti-clockwise, to

Fig 33

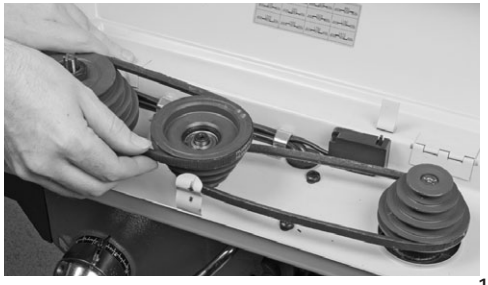
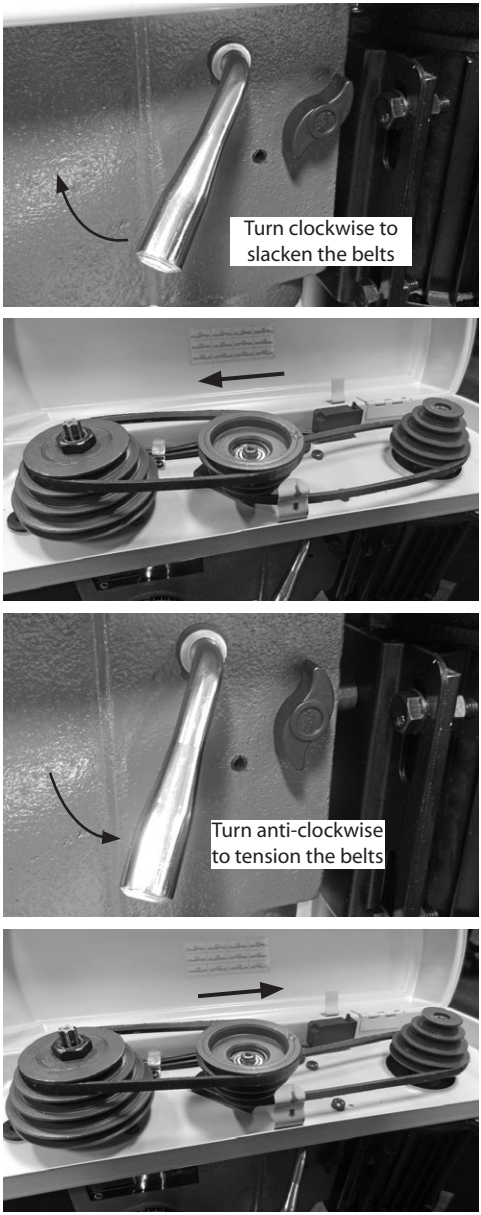


Fig 34-35-36-37

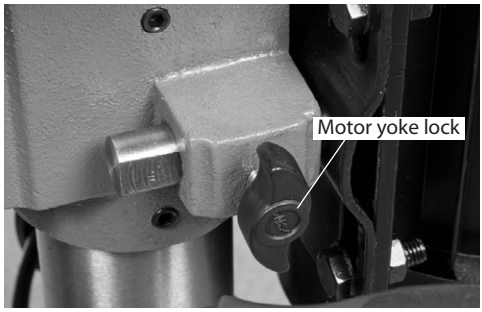


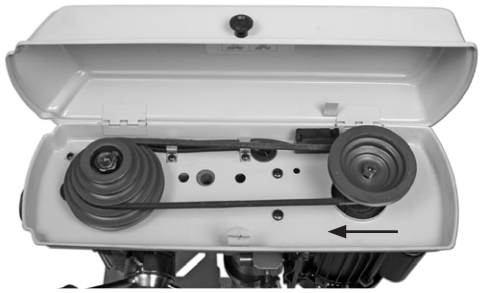
move the motor assembly "out". Tighten the motor yoke butterfly knobs (A) to lock the motor assembly in position.

Pillar Drills (505198 Only)

To release the tension, loosen the two motor yoke locks on either side of drilllhead, push the motor assembly up against the drillhead casting, thus releasing the tension on the pulleys, (See figs 38-39). Refer to the (speed select table) and ascertain the belt positions for the speed you require.

Fig 38-39





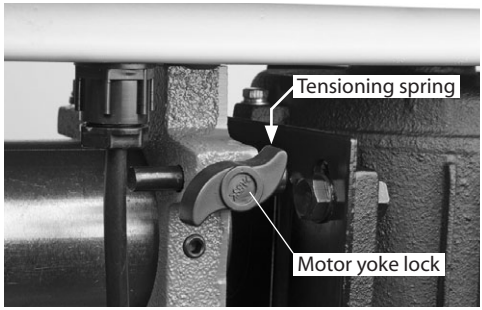
WARNING! TAKE CARE NOT TO TRAP YOUR FINGERS WHEN REPOSITIONING THE BELT ON THE PULLEYS!

Turn the pulleys to check the belts move freely. Tension the pulleys by pushing the motor assembly out and securing the motor yoke butterfly knobs to lock the motor assembly in position.

Radial Pillar Drills (505201-505202 Only)

To release the tention, loosen the motor yoke tensioning locks which loosens the tension on the spring, push the motor up against the drillhead casting, thus releasing the tension on the pulleys, (See fig 40-41).

Fig 40-41



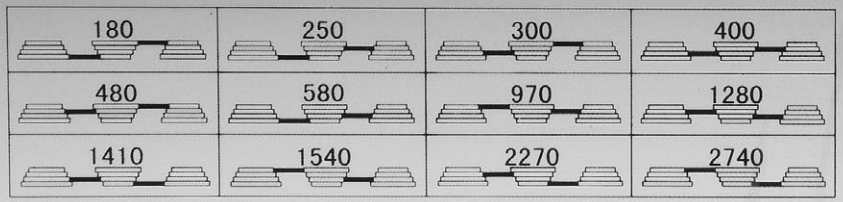
WARNING! TAKE CARE NOT TO TRAP YOUR FINGERS WHEN REPOSITIONING THE BELT ON THE PULLEYS!

Turn the pulleys to check the belts move freely. Tension the pulleys by pushing the motor assembly out and securing the motor yoke butterfly knob to lock the motor assembly in position. Lower the belt and pulley cover carefully, (remember the micro switch).

RE-CONNECT THE SUPPLY AND SWITCH ON. Check the drill runs smoothly, no hard vibration etc.

If all seems satisfactory, recommence drilling operations.

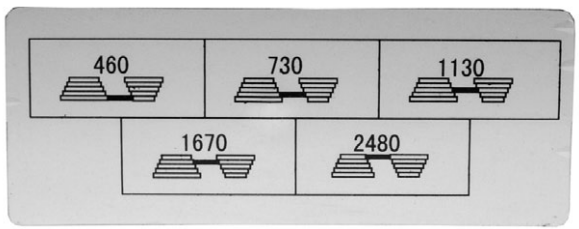
SPINDLE SPEEDS IN R.P.M.



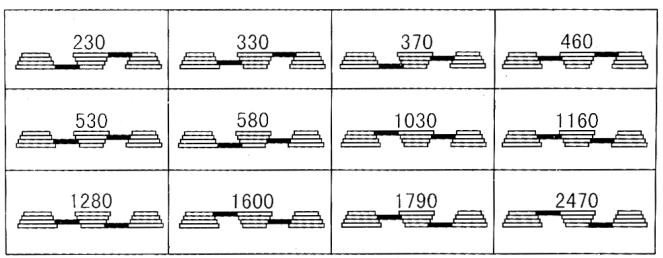
505200 (AH2003FDDP)

RECOMMENDED SPEED FOR DRILL SIZE & MATERIAL

SPEED RANGE (RPM)	WOOD		ALUM ZINC BRASS		IRON STEEL	
	in	mm	in	mm	in	mm
2740	3/8	9.5	7/32	5.6	1/8	3.2
1410-2270	5/8	16.0	11/32	8.75	1/4	6.4
970-1280	7/8	22.0	15/32	12.0	11/32	8.75
480-580	1-1/4	31.75	11/16	17.5	1/2	12.5
250-400	1-5/8	41.4	3/4	19.0	5/8	16.0
180	2	50.8	7/8	22.0	3/4	20.0



505198 (AH1302DP)
505201 (AH16RD)
505202 (AH16FRD)



505199 (AH1603DP)

RECOMMENDED SPEED FOR DRILL SIZE & MATERIAL

SPEED RANGE (RPM)	WOOD		ALUM ZINC BRASS		IRON STEEL	
	in	mm	in	mm	in	mm
2740	3/8	9.5	7/32	5.6	1/8	3.2
1410-2270	5/8	16.0	11/32	8.75	1/4	6.4
970-1280	7/8	22.0	15/32	12.0	11/32	8.75
480-580	1-1/4	31.75	11/16	17.5	1/2	12.5
250-400	1-5/8	41.4	3/4	19.0	5/8	16.0
180	2	50.8	7/8	22.0	3/4	20.0

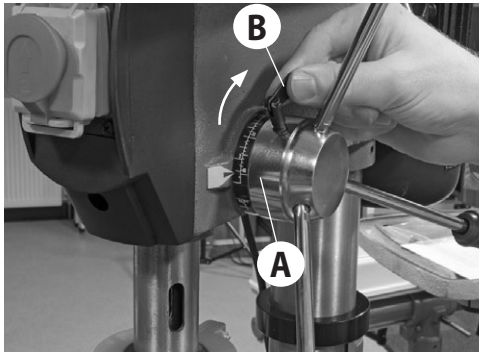
Preparation

You wil require the morse taper drift (11)

Pillar Drill (505200-505201-505202) Only

Lower the quill to its maximum depth by turning the feed lever handle. While holding the handle turn the depth scale ring (A) fully round and then tighten the butterfly depth stop clamp (B) to lock the quill in position, (See fig 42)

Fig 42



Place a piece of timber on the drill table to prevent the chuck from being damaged and lower the quill to it's maximum depth by turning the feed lever handle.

Removing the chuck

While holding the handle in place turn the chuck to line up the morse taper arbor in the quills machined slot, (See fig 43). Insert the morse taper drift (11) in the quills slot, thus pushing the morse taper down and releasing the chuck, (See fig 44).

Fig 43

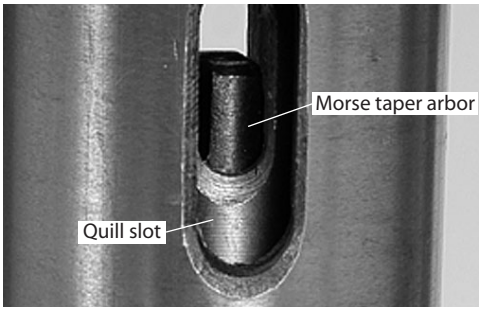
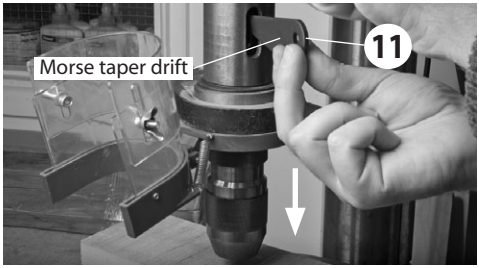


Fig 44



WARNING! DISCONNECT THE MACHINE FROM THE MAINS SUPPLY BEFORE CONTINUING!

Cleaning

Excessive dust in the motor can cause excessive heat to develop. Every effort should be made to prevent foreign material from entering the motor.

When operated under conditions likely to permit accumulations of dust, dirt or waste, a visual inspection should be made at frequent intervals. Accumulations of dry dust can usually be blown out successfully.

Caution: To avoid eye injury or adverse reaction to dust, high pressure hoses should not be used especially in poorly ventilated areas. The operator performing this cleaning function should wear safety goggles and dust filter mask.

After cleaning all dust and debris a light coating of machine oil on the quill then to spread the oil.

If the machine is going to stand idle for any length of time, a light coat of spray or machine oil over the column and table will prevent rusting.

Electrics

WARNING! DO NOT USE THE MACHINE IF THE POWER CABLE HAS BECOME DAMAGED

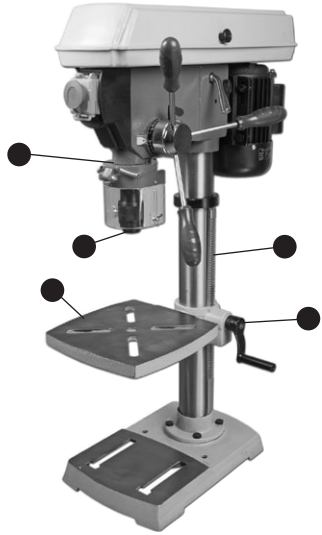
If any servicing (other than the above cleaning) becomes necessary the unit should be returned to Axminster Tool Centre to be repaired by one of our qualified electricians. Contact our technical sales department for further assisance.

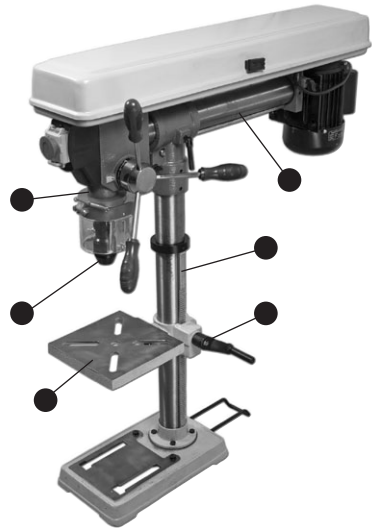
Call 03332 406406
Email technical@axminster.co.uk

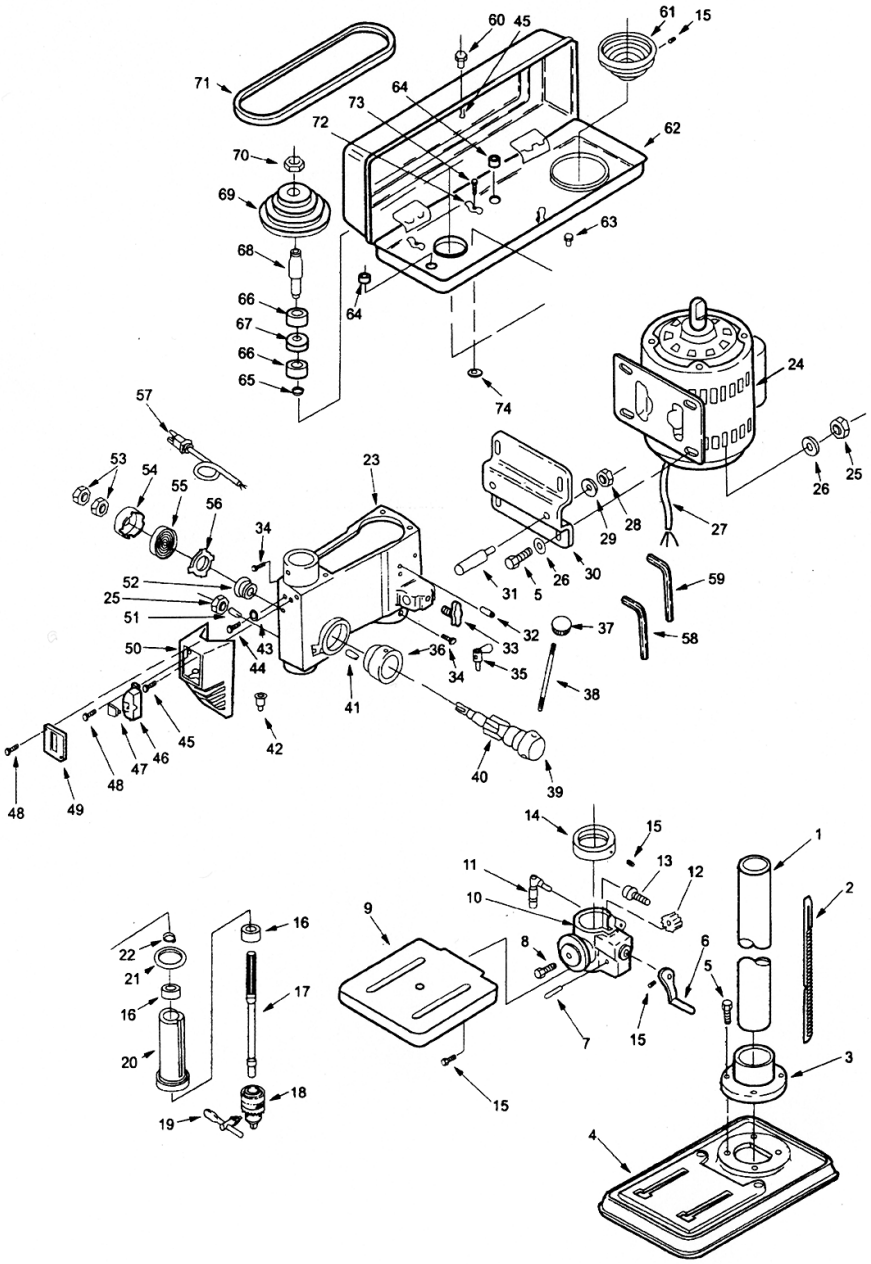
WARNING! DO NOT ATTEMPED TO REPAIR IT YOURSELF CONTACT OUR TECHNICAL SALES TEAM FOR ASSSISTANCE!

Motor speed

The speed of the motor cannot be regulated or changed - no adjustment is necessary.



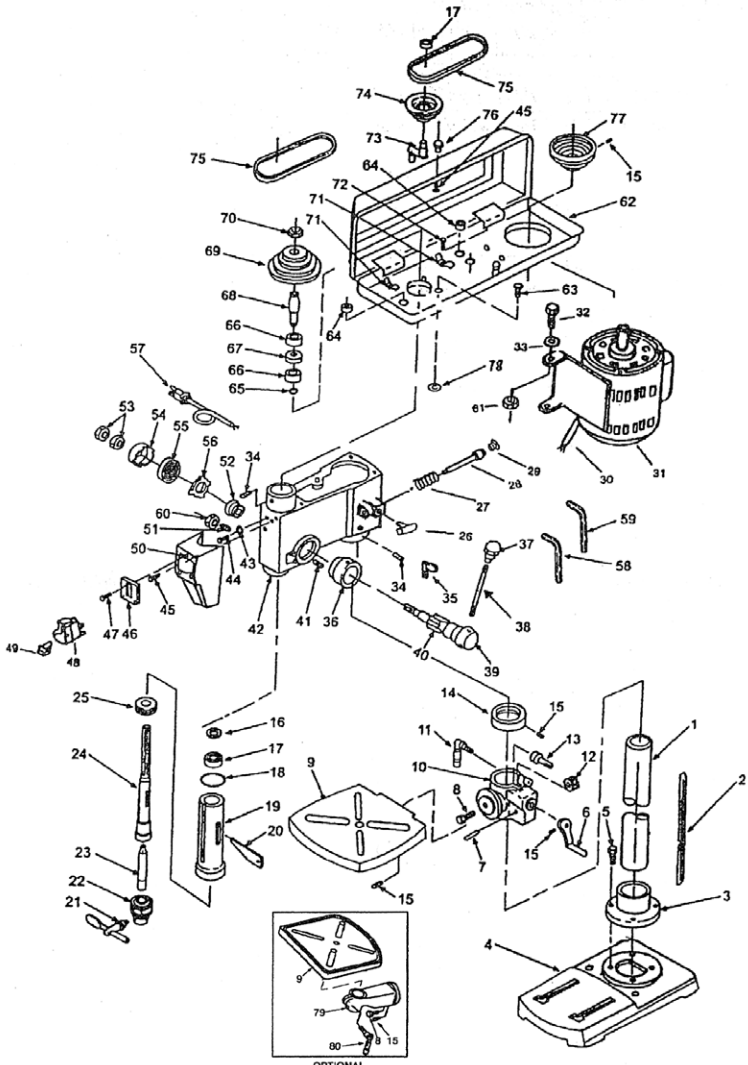



60
45
61
15
71
64
73
72
62
70
69
63
68
66
67
66
65
64
74
24
57
53
54
55
56
23
34
52
25
51
50
43
44
41
36
34
33
32
37
58
59
31
5
26
30
29
28
27
26
25
48
49
48
47
46
45
42
40
39
38
14
15
1
11
13
12
2
10
9
8
6
5
7
15
15
3
4
16
22
21
16
17
20
18
19

Parts Breakdown/List (505198)

1 Tube-column
2 Rack
3 Support-column
4 Base
5 Screw-hex Hd M8 x 20 GB5781-86
6 Crank
7 Shaft-gear
8 Screw-hex Hd Ml 2 x22 GB5781-86
9 Table
10 Support-table w/scale
11 Clamp -table
12 Gear - helical
13 Worm- elevation
14 Collar - rack
15 Screw - hex. soc. set M6 xl0 GB80-85
16 Bearing-ball 60201
17 Shaft-spindle
18 Chuck JT33 13mm B16 13mm
19 Key chuck
20 Tube -quill
21 Gasket-quill
22 Ring -retaining 11GB894.1-86
23 Head
24 Motor
25 Nut-hex M8GB6170-86
26 Washer 8GB972-85.
27 Cord -motor
28 Nut -hex M10 GB6170 -86
29 Lock washer 10 GB93-87
30 Bracket -motor
31 Support - motor bracket 32Pin-roll6xl6GB879-86
33 Knob - motor adjusting
34 Screw -hex. soc set M8 x 8 GB80-85
35 Lock -depth screw
36 Ring -depth stop w/scale
37 Knob
38 Rod

39 Hub
40 Shaft-pinion
41 Pin -stop
42 Connector -wire
43 Lock washer -ext 5 GB862.1-87
44 Screw-pan hd M5 x 8 GB818-85
45 Screw pan hd M5 x 12 GB818-85
46 Switch -locking
47 Key -switch
48 Screw -self tap. pan hd ST4.2 x 9.5 GB845-85
49 Cover -switch plate
50 Box -switch
51 Screw -special set
52 Seat spring
53 Nut -hex M12 x 1.5 GB6173-86
54 Cap -spring
55 Spring -torsion
56 Retainer -spring
57 Cord -power
58 Hex "L" wrench 3mm
59 Hex "L" wrench 4mm
60 Knob
61 Pulley -motor
62 Guard -pulley
63 Screw -wash hd M6 x 12 GB9074.1-88
64 Bushing -rubber
65 Ring -retaining 17 GB894.1-86
66 Bearing -ball 60203
67 Spacer
68 Insert.pulley
69 Pulley-spindle
70 Nut -pulley
71 Belt k31
72 Clamp cord
73 Screw -pan hd M5 x 16 GB818-85
74 Washer foam

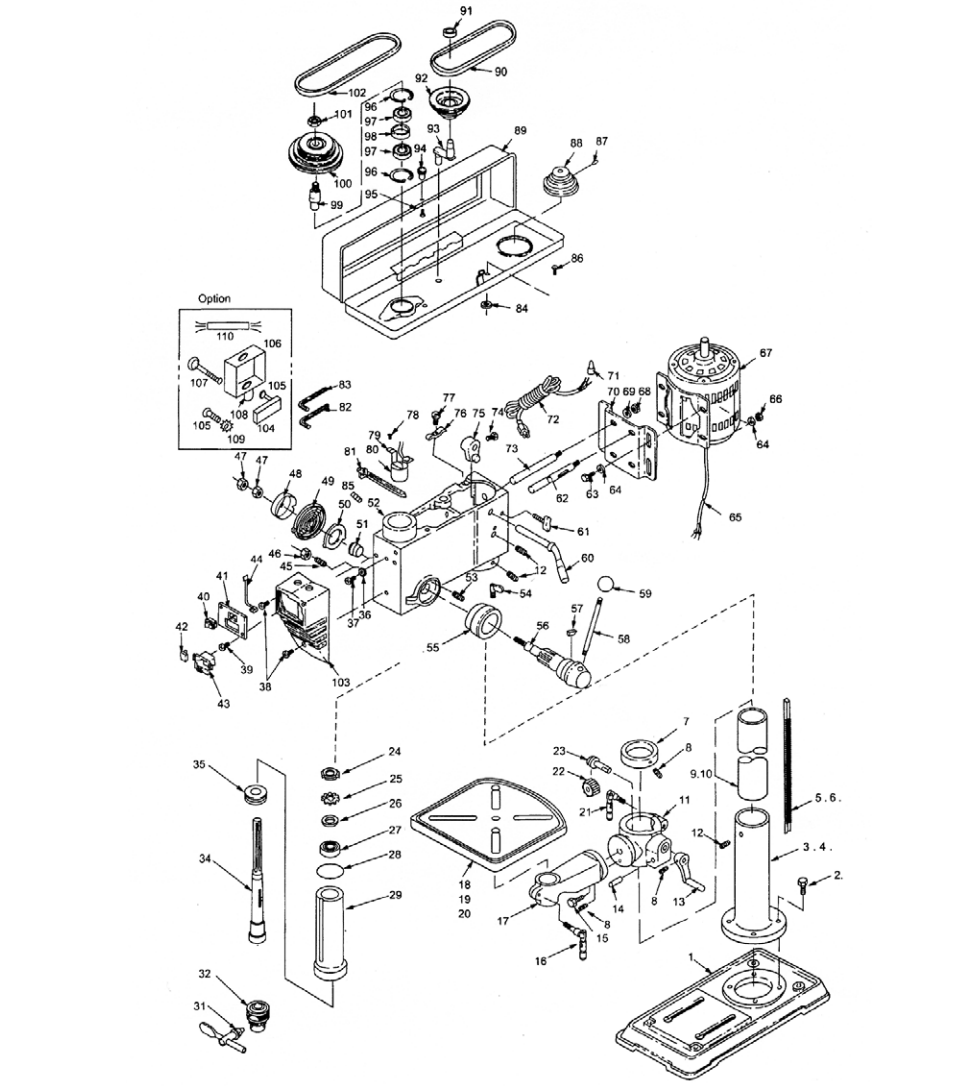


No.	DESCRIPTION	PART No.	Q'TY
1	Column tube (F)	13401003	1
	Column tube (B)	13401003A	1
2	Rack (B)	13201010A	1
	Rack (F)	13201010B	1
3	Support column (F)	13401002	1
	Support column (B)	13401002A	1
4	Base	13401001	1

5	Hex.hd screw GB5781 -86	M10X25	4
6	Crank	13401009	1
	Crank (Optional)	13201009	1
7	Gear pin	13201007	1
8	Hex.hd screw GB5781-86	M12X22	1
9	Table	13401014	1
	Table (Optional)	13401014A	1
10	Table support	13401004	1

Parts Breakdown/List (505199)

11	Column clamp	161010I3B	1
12	Gear helical	13201006	1
13	Worm	13201008	1
14	Rack collar	13401011	1
15	Hex.soc screw GB80-85	M6X10	4
16	Retaining ring GB894.1-86	11	1
17	Ball bearing	60201	2
18	Quill gasket	13303006	1
19	Quill tube	13303002	1
20	Key-drift	16103008	1
21	Chuck key	16103009-2	1
22	Chuck (16mm)(0ptional)	B16	1
	Chuck (16mm)(0ptional)	JT3	1
23	Arbor (Optional)	MT2-B16	1
	Arbor (Optional)	MT2-JT3	1
24	Spindle	13303001	1
25	Ball bearing	80204	1
26	Motor adjust knob	13102005	1
27	Spring-Motor stop	13102004	1
28	Stop motor	13102002	1
29	Rubber	13102003	1
30	Motor cord	13102016	1
31	Motor.	13402020	1
32	Hex.hd screw GB5781-86	M8X25	2
33	Washer GB97.2-85	8	2
34	Hex.soc screw GB80-85	M8X8	2
35	Depth screw lock	16104012	1
36	Depth stop ring	13304003	1
37	Knob	13204011	3
38	Rod	13204005	3
39	Hub	13304001	1
40	Shaft-pinion	13204002A	1
41	Pin stop	13304010	1
42	Head	13402001	1
43	Lock washer GB862.1-87	5	2
44	Screw GB818-85	M5X6	2
45	Screw GB 818-85	M5X12	3
46	Switch plate cover	13102009Q	1
47	Pan cross screw GB845-85	ST3.5X9.5	3
48	Lock switch (Optional)	16102010	1
	Lock switch (Optional)	J-9301A	1
	Magnetic switch(Optional)	KJD20	1
	Magnetic switch(Optional)	KJD12C	1
49	Switch key	16102011	1
50	Switch box	13402008	1
51	Scr.xc.Set fl	13202021	1
52	Spring seat	13202006	1
53	Hex.nutGB6170-86	M12	2
54	Cap spring	16104008	1
55	Spring	16104009	1
56	Retaining spring	16104007	1
57	Power cord	13302015	1
58	Hex wrench GB5356-86	3	1
59	Hex wrench GB5356-86	4	1
60	Hex.nutGB6170.86	M8	1
61	D1N985-87	M8	2
62	Guard	13405000	1
63	Screw GB818-85	M6X8	4
64	Bushing-rubber	20105012	2
65	Retaining ring GB894.1.86	17	1
66	Ball bearing	80204	2
67	Spacer	13302023	1
68	Pulley insert	13302022	1
69	Pulley spindle	13205006D	1
70	Nut pulley	13302025	1
71	Cord clamp	16102014	2
72	Screw GB818-85	M5X10	2
73	Pivot-idler	13205009	1
74	Pulley centre	13205008A	1
75	V-Belt	K20/K21	1
76	Knob	16105008	1
77	Pulley motor	13205005A	1
78	Foam washer	13105009	4
79	Arm table (Optional)	13401005	1
80	Column clamp (Optional)	16101013A	1
81	Instruction manual	13406010	1



TEM	DESCRIPTION	PART No	PART No	PART No
		RDM-1601F(B)	RDM-2001F(B)	RDM-2801F(B)
1	BASE	13301001	16101001	16101001
2	SCREW-HEX.HD GB5782-86	MI 0-40	MI 0-40	MI 0-40
3	SUPPORT COLUMN(F)	16101002	16101002	| 16201002
4	SUPPORT COLUMN(B)	16101002B	16101002B	16201002A
5	RACK(F)	16101010	16101010	16101010

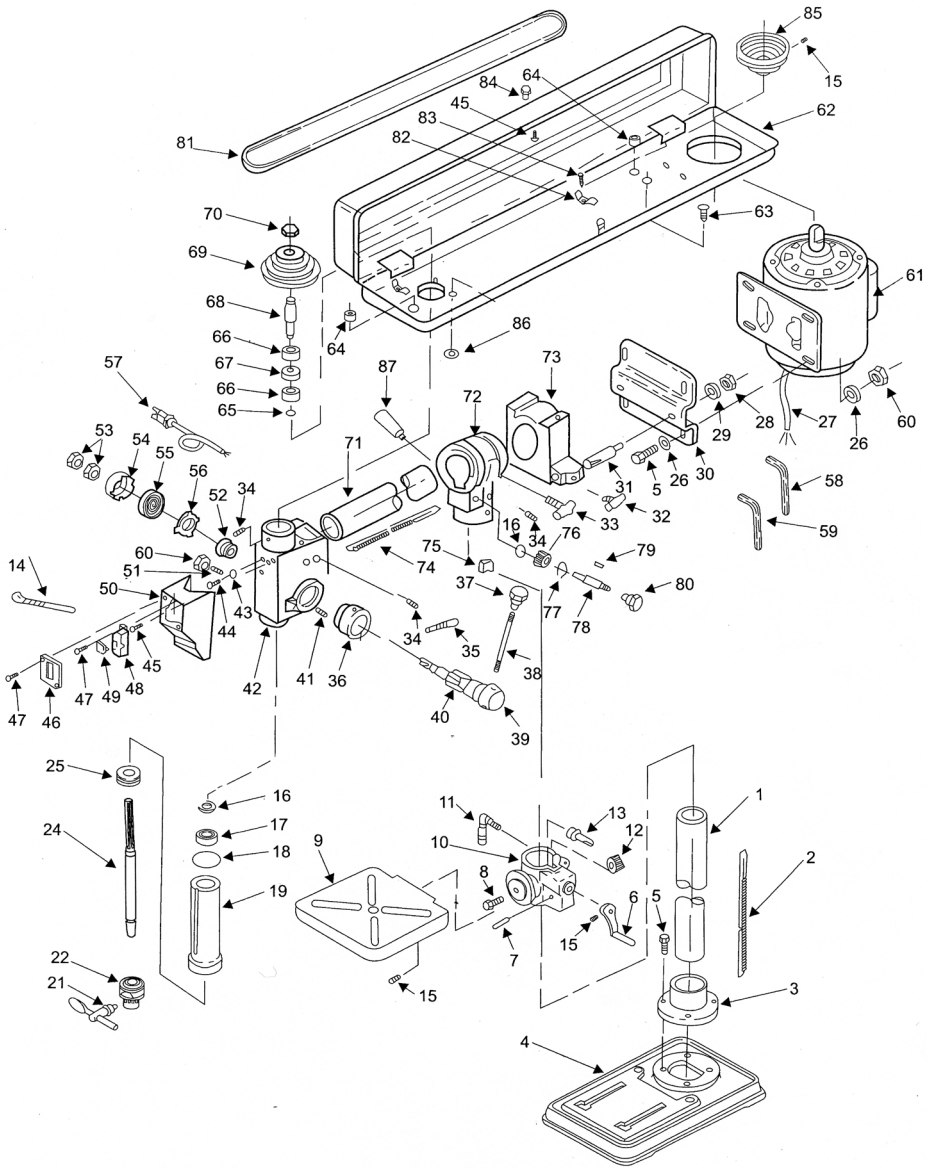
Parts Breakdown/List (505200)

6	RACK(B)	16101010A	16101010A	16101010A
7	COLLAR	16101011	16101011	.16201011
8	SCREW-HEX.SOC GB80-85	M6-10	M6-10	M6-10
9	TUBE-COLUMN(F)	16101003	16101003	16201003
10	TUBE-COLUMN(B)	16101003B	16101003B	16201003A
11	SUPPORT-TABLE	16101004	16101004	16201004
12	SCREW-HEX SOC GB80-85	M10-12	M10-12	M10-12
13	CRANK	13201009	13201009	13201009
14	PIN-GEAR	16101007	16101007	16101007
15	SCREW-HEX HD GB5782-86	M16-35	M16-35	M16-35
16	CLAMP-TABLE	16101013	16101013	16101013
17	ARM-TABLE(OPTION)	13301005	16101005	16201005
18	TABLE SQUARE(OPTION)	13301014	16101014	
19	TABLE ROUND(OPTION)	16101014A	16101014A	
20	WET TABLE(OPTION)		16101014B	16201014
21	CLAMP COLUMN	16101012	16101012	16101012
22	GEAR HELICAL	16101006	16101006	16101006
23	WORM	16101008	16101008	16101008
24	LOCK NUT		16103005	16103005
25	RING-LOCKING	11GB894. 1-86	16103004	16103004
26	WASHER		16103003	16103003
27	BEARING-BALL	60201	60203	60203
28	GASKET-QUILL	13303006	16103006	16203006
29	TUBE-QUILL	13303002A	16103002	16203002
31	KEY-CHUCK	16103010	16103010	16103010
32	CHUCK (OPTION)	JT3/B16/B18	JT3/B16/B18	JT3/B16/B18/B22
34	SPINDLE	13303001	16103001	16203001
35	BEARING-BALL	60204	60204	60205
36	LOCK WASHER GB862.1-87	5	5	5
37	SCREW GB818-85	M5-6	M5-6	M5-6
38	SCREW GB818-85	M5-16	M5-16	M5-16
39	SCREW-PAN CR GB845-85	ST4.2-9.5	ST4.2-9.5	ST4.2-9.5
40	SWITCH-ROCKER	13302009	16102012	16102012
41	COVER-SWITCH PLATE	16102011	16102009	16202009
42	KEY-SWITCH	J-9301A	16102011	16102011
43	SWITCH-LOCKING(OPTION)	KJD6	J-9301A	J-9301A
		KJD12	KJD6	KJD6
			KJD12	KJD12

			KJD18	KJD18
44	LEAD		16102018	16102018
45	SCR.SC.SET.FL	13302021	16102021	16102021
46	NUT-HEX GB6170-85	M8	M10	M10
47	NUT-HEX GB6172-85	M12	M12	M12
48	CAP SPRING	16104008	16104008	16104008
49	SPRING	16104009	16104009	16104009
50	RETAINING-SPRING	16104007	16104007	16104007
51	SEAT-SPRING	16104006	16104006	16104006
52	HEAD	13302001	16102001	16202001
53	PIN-STOP	13304010	16104010	16104010
54	LOCK-DEPTH SCREW	16104012	16104012	16104012
55	RING-DEPTH STOP	13304003	16104003	16104003
56	SHAFT-PINION	13304000	16104000	16104000
57	GUDIE-SCALE		16104004	16104004
58	ROD	13304005	16104005	16104005
59	KNOB	13304011	16104011	16104011
60	HANDLE-BELT TENSION	16102004	16102004	16202004
61	KNOB-MOTOR ADJUST	16102005	16102005	16102005
62	SUPPORT-MOTOR BRA(R)	16102002	16102002	16202003
63	SC-HEX.HD.GB5782-86	M8-20	M8-20	M8-20
64	WASHER GB97.2-85	8	8	8
65	CORD-MOTOR (OPTION)	13302016	16102016	16202016
66	NUT-HEX GB6170-86	M8	M8	M8
67	MOTOR (OPTION)	16102020	16102020	16202020
68	NUT-HEX GB6170-86	M12	M12	M12
69	LOCK WASHER GB93-87	12	12	12
70	MOUNT-MOTOR (OPTION)	16102007	16102007	16102007
71	CONNECTOR-WIRE	13302019	16102019	16102019
72	CORD-POWER (OPTION)	13302015	16102015	16202015
73	SUPPORT-MOTOR BRA(L)	16102003	16102003	16202002
74	SC.HEXHDGB5781-86	M8-16	M8-16	M8-16
75	LEVER-ADJUSTING	16102006	16102006	16102006
76	CLAMP-CORD	161020.14	16102014	16102014
11	SCREW GB818-85	M5-12	M5-12	M5-12′
78	SCREW GB818-85		M6-12	M6-12
75	LEVER-ADJUSTING	16102006	16102006	16102006
75	LEVER-ADJUSTING	16102006	16102006	16102006

Parts Breakdown/List (505200)

76	CLAMP-CORD	161020.14	16102014	16102014
11	SCREW GB818-85	M5-12	M5-12	M5-12′
78	SCREW GB818-85		M6-12	M6-12
79	BRACKET-BULB SOCKET		16102013	16102013
80	SOCKET-BULB		E-27	E-27
81	TIE-WIRE	16102017	16102017	16102017
82	WRENCH HEX GB5356-86	3	3	3
83	WRENCH HEX GB5356-86	4	5	5
84	WASHER FOAM	13105009	13105009	13105009
85	SCR-HEX. SOC. SETGB80-85	M8x8		
86	SCR-WASHER GB9074. 1-88	M6-12	M6-12	M6-12
87	SCR-HEX. SOC. SET GB80-85	M8-16	M8-16	1 M10-12
88	PULLEY-MOTOR	16105005	16105005	16205005
89	GUARD	13305000	16105000	16205000
90	BELT'V"	16105010M24	1-6105010M24	16205010A27
91	BEARING BALL	60202	60202	60202
92	PULLEY-CENTRE 12SP	16105006	16105006	
	PULLEY-CENTRE 16SP	13305006	16105006A	16205006
93	PIVOT-IDLER 12SP	16105007	16105007	
	PIVOT-IDLER 16SP	16205007	16205007	16205007
94	KNOB	16105008	16105008	16105008
95	SCREW GB818-85	M5-12	M5-12	M5-12
96	RING-RETAINING	17GB894.1-86	16102024	16202024
97	BEARING BALL	60203	60204	60205
98	SPACER	13302023	16102023	16202023
99	INSERT-PULLEY	13302022	16102022	16202022
100	PULLEY-SPINDLE (12SP)	13305009	16105009	
	PULLEY-SPINDLE (16SP)	13305009A	16105009A	16205009
101	NUT-PULLEY	13302025	16102025	16102025
102	10/14/2013	16105010M24	16105011M26	16205011A2
103	BOX-SWITCH	13102008	16102008	16202008
104	TERMINATION BLOCK	20102031	20102031	20102031
105	SCREW GB818-85	M4x6	M4x6	M4x6
106	TERMINAL BLOCK	20102030	20102030	20102030
107	SCREW GB818-85	M5x35	M5 x 35	M5x35
108	RELIEF-STRAIN	16102020-1	16102020-1	16102020-1
109	LOCK WASHER GB862.1 -87	4	4	4
110	CORD	13302015J	16102015H	16202015H


85
15
84
64
62
45
83
82
81
70
63
69
61
68
86
66
64
67
66
65
57
87
73
72
29
28
27
60
26
53
54
55
71
56
52
34
31
5
26
30
58
32
33
59
16
34
76
75
74
79
14
60
51
37
80
50
43
44
77
78
34
35
38
47
46
47
49
48
45
42
41
36
40
39
25
16
24
17
18
19
9
11
13
1
10
12
2
8
6
5
15
7
22
21
15
3
4

Parts Breakdown/List (505201-505202)

NO.	DESCRIPTION	PART No.	Q'TY
1	COLUMN TUBE	13201003A	1
2	RACK	13201010A	1
3	SUPPORT COLUMN	13201002	1
4	BASE	13201001	1
5	HEX.HD SCREW GB5781-86	M8X20	8
6	CRANK	13201009	1
7	GEAR PIN	13201007	1
8	HEX.HD SCREW GB5781-86	M12X22	1
9	TABLE ROUND	13201014A	1
	TABLE SQUARE	13201014	1
10	TABLE SUPPORT	13201004	1
11	COLUMN CLAMP	16101013	1
12	GEAR HELICAL	13201006	1
13	WORM	13201008	4
14	TIE WIRE	16102017	1
15	HEX. SOC SCREW GB80-85	M6X10	2
16	RETAINING RING GB894.1-86	11	2
17	BALL BEARING	60201	2
18	QUILL GASKET	13303006	1
19	QUILL TUBE	13203002C	1
21	CHUCK KEY	13303009-2	1

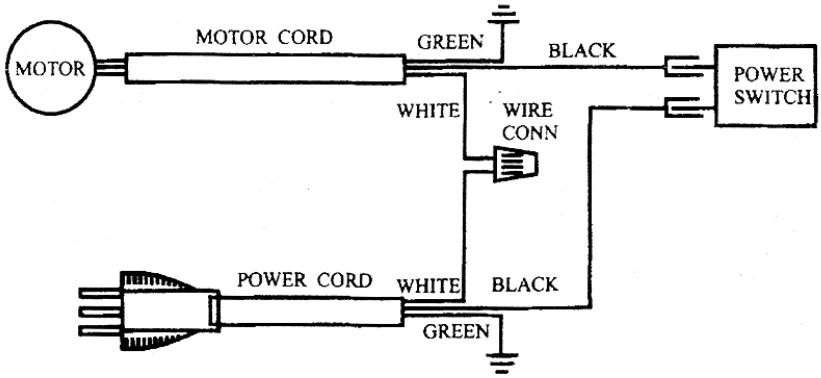
22	CHUCK	B16(16mm)	1
		JT33(16mm)	
24	SPINDLE	13303001H B16 13303001 JT3	1
25	BALL BEARING	80204	1
26	WASHER GB97.2-85	8	8
44	SCREW GB818-85	M5X6	2
45	SCREW GB818-85	M5X12	3
46	SWITCH PLATE COVER	13202009	1
47	PAN CROSS SCREW GB845-85	ST4.2X9.5	2
48	LOCK SWITCH	J-9301A	1
49	SWITCH KEY		1
50	SPRING BOX	13202008	1
51	SCR.XC.SET FL	13202021	1
52	SPRING SEAT	13204006	1
53	HEX NUT GB6172-86	M12	2
54	CAP SPRING	13104008	1
55	SPRING	13104009	1
56	RETAINING SPRING	13104007	1
57	POWER CORE	13202015	1
58	HEX WRENCH GB5356-86	3	
59	HEX WRENCH GB5356-86	4	1
60	HEX NUT GB6170-86	M8	5
61	MOTOR	13202020	1

62	GUARD	C13205000	1
63	WASHER SCREW GB9074.1-86	M6X12	4
64	BUSHING -RUBBER	20105010	2
65	REATAINING RING GB894.1-86	17	1
66	BALL BEARING	60203	2
67	SPACER	13302023	1
68	PULLEY	13302022	1
	INSERT		
69	PULLEY	C13205006	1
	SPINDLE		
70	NUT-PULLEY	13302025	1
27	MOTOR CORD	13202016	1
28	HEX NUT GB6170-86	M10	2
29	LOCK WASHER GB93-87	10	2
30	MOTOR MOUNT	13202007	1
31	MOTOR SUPPORT	13202002	2
32	KNOB MOTOR AD-JUSTING	13102005	2
33	KONB ADJUSTING	C13202005	1
34	HEX SOC SCREW GB80-85	M8X8	5
35	DEPTH SCREW LOCK	16104012	1
36	DEPTH STOP RING	13304003	1

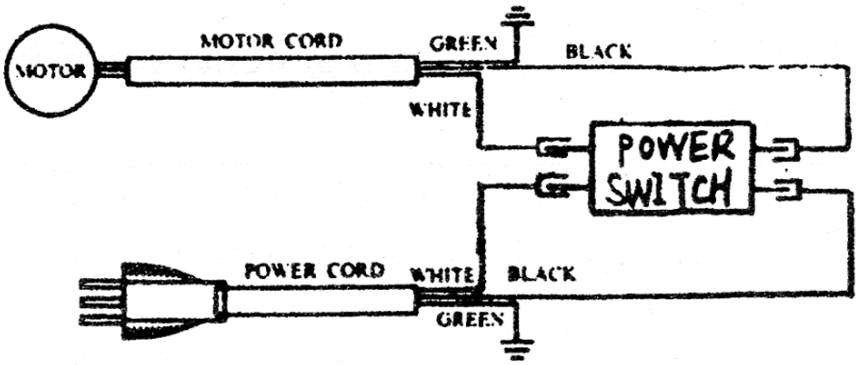
37	KNOB	13204011	3
38	ROD	13204005	3
39	HUB	13304001	1
40	SHAFT-PINION	13204002	1
41	PIN STOP	13304010	1
42	HEAD	C13202001	1
43	LOCK WASHER GB862.1-87	5	2
71	CROSS TUBE COLUMN	C 13202003	1
72	CROSS SUPPORT	C13201004	1
73	TAIL SUPPORT	C13201015	1
74	RACK	C13201010	]
75	LOCKING PIECE	C13202016	
76	GEAR HELICAL	C13201006	1
77	RETAINING RING GB894.1-86	14	1
78	SHAFT	C 13201007	1
79	KEY GB 1096-79	4X4X10	1
80	KNOB	15504010	1
81	V BELT GB1171-74	0-1400	1
82	CLAMP-CORD	16102014	2
83	SCREW GB818-85	M5X16	2
84	KNOB	16105008	1
85	PULLEY MOTOR	C13205005	1
86	FOAM WASHER	13105009	4
87	GUIDE PIN	C13201017	1

Wiring Diagram

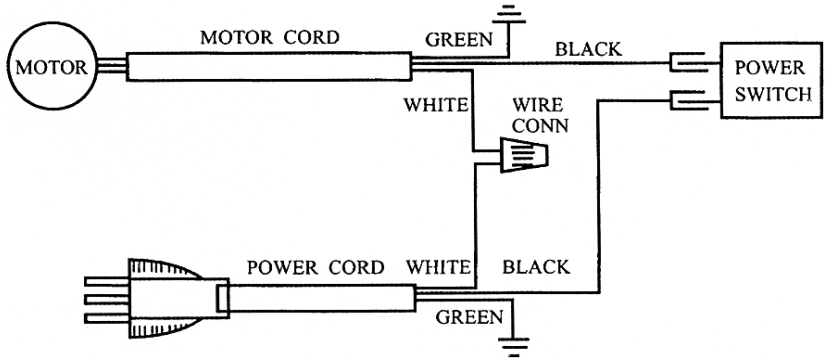
Code 505198 (AH1302DP)



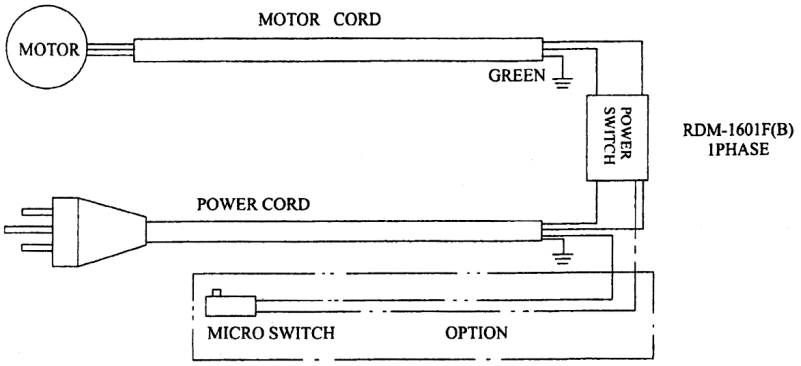
Code 505199 (AH2003FDP)

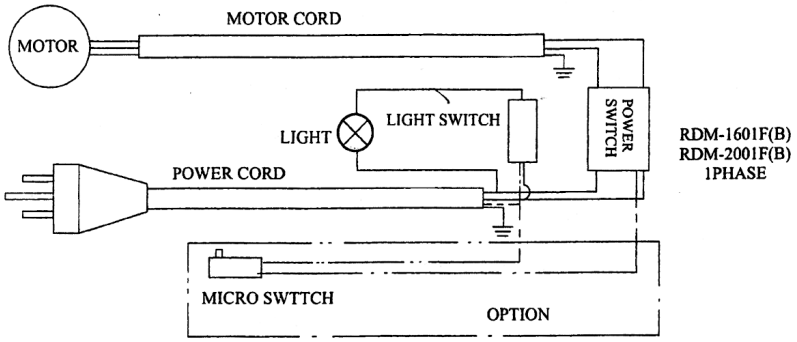


Code 505201-505202 (AH16RH, AH16FRD)



Code 505200 (AH2003FDP)





Troubleshooting

TROUBLE	PROBABLE CAUSE	REMEDY
Noisy Operation	1. Incorrect belt tension 2. Dry spindle 3. Loose spindle pulley 4. Loose motor pulley	1. Adjust the tension 2. Lubricate spindle 3. Checking tightness of retaining nut on pulley, and tighten if necessary 4. Tighten set screws in pulleys
Drill bit burns	1. Incorrect speed 2. Chips not coming out of hole 3. Dull drill bit 4. Feeding too slow 5. Not lubricated	1. Change speed 2. Retract drill bit frequently to clear chips 3. Resharpen drill bit 4. Feed fast enough-allow drill bit to cut. 5. Lubricate drill bit
Drill bit leads off hole not round	1. Hard grain in wood or lengths of cutting lips and/or angles not equal 2. Bent drill bit	1. Resharpen drill bit correctly 2. Replace drill bit
Wood splinters on underside	1. No "back-up material" under workpiece	1. Use "back-up material"
Workpiece torn loose from hand	1. Not supported or clamped properly	1. Support workpiece or clamp it
Drill bit binds in workpiece	1. Workpiece pinching drill bit or excessive feed pressure 2. Improper belt tension	1. Support workpiece or clamp it 2. Adjust tension
Excessive drill bit runout or wobble	1. Bent drill bit 2. Worn spindle bearings 3. Drill bit not properly installed in chuck 4. Chuck not properly installed	1. Use a straight drill bit 2. Replace bearings 3. Install drill bit properly 4. Install chuck properly
Quill returns too slow or too fast	1. Spring has improper tension	1. Adjust spring tension
Chuck will not stay attached to spindle it falls off when trying to install it	1. Dirty, grease or oil on the tapered inside surface of chuck or on the spindles tapered surface	1. Make sure all surfaces are free of dust and grease

Notes

The **Axminster guarantee** is available on Hobby, Trade, Industrial, Engineer, Air Tool & Axcnc Technology Series machines

It's probably the most comprehensive FREE guarantee ever- buy with confidence from Axminster!
So sure are we of the quality, we cover all parts and labour free of charge for three years!

- **Look for the icon and put your trust in Axminster**
- **No registration necessary - just keep your proof of purchase**
- **Optional Service Plan for Industrial Series machinery**

AXMINSTER Hobby SERIES
Great value & easy-to-use, perfect for use at home

AXMINSTER Trade SERIES
Solid, reliable machines designed for daily use

AXMINSTER INDUSTRIAL SERIES
Top performers with class leading features and build quality for use in busy workshops

AXMINSTER Engineer SERIES
Quality, precision machines for the workshop or education

AXMINSTER Model Engineer SERIES
Small machines for the home engineer

AXMINSTER TOOLS air
Compressors and tools for home or workshop use; durable and great value

Axcnc Technology
Precision CNC machines for industry and education

Free Three Year Guarantee on Axminster Hobby, Trade and Industrial Series woodworking and engineering machines, Axminster Air compressors and Air Tools, and bench top grinders - no registration necessary just proof of purchase.

We will repair or replace at our discretion and will collect only from a UK mainland address, irrespective of the original delivery address.

The Guarantee assumes that you have bought the correct machine for the required operation, in accordance with our guidelines; have operated and maintained it in accordance with the instruction manual; and that all cutting machines will be used with a blade which is sharp and serviceable at all times. It does not cover consumable items purchased with the original product, including original blades or abrasives.

Normal wear and tear; misuse, abuse and neglect are excluded and the machine should not have been modified in any way. Please do not attempt to service the product without first contacting us; we are happy to guide you but failure to do so may invalidate the guarantee.

The Guarantee is transferable from owner to owner in the first three years but you must have original proof of purchase. Should we need to replace a machine in the first three years the guarantee will still continue to be effective from the original purchase date.

Full Terms and Conditions can be found at **axminster.co.uk/terms**
This guarantee does not affect your statutory rights.

For more information visit **axminster.co.uk/3years**

Please dispose of packaging for the product in a responsible manner. It is suitable for recycling. Help to protect the environment, take the packaging to the local recycling centre and place into the appropriate recycling bin.

Only for EU countries

Do not dispose of electric tools together with household waste material. In observance of European Directive 2002/96/EC on waste electrical and electronic equipment and its implementation in accordance with national law, electric tools that have reached the end of their life must be collected separately and returned to an environmentally compatible recycling facility.

Axminster Tools & Machinery Ltd
Weycroft Avenue, Axminster, Devon EX13 5PH

axminster.co.uk